



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/942,608	08/31/2001	Rajesh R. Shah	219.40223X00	7484

7590 10/25/2006

Rob D. Anderson  
C/O BLAKELY, SOKOLOFF, TAYOR & ZAMAN LLP  
12400 Wilshire Boulevard  
Seventh Floor  
Los Angeles, CA 90025

EXAMINER

SHINGLES, KRISTIE D

ART UNIT	PAPER NUMBER
----------	--------------

2141

DATE MAILED: 10/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/942,608

Applicant(s)

SHAH ET AL.

Examiner

Kristie Shingles

Art Unit

2141

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

Claims 1 - 26 are pending.

### ***RESPONSE TO AMENDMENTS***

Claims 1, 11 and 19 have been amended. Claims 24-26 are newly added.

### ***CONTINUED EXAMINATION UNDER 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/25/2006 has been entered.

### ***RESPONSE TO ARGUMENTS***

Applicant's arguments with respect to claims 1, 11 and 19 have been considered but are moot in view of the new ground(s) of rejection.

### ***CLAIM REJECTIONS - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2141

1. **Claims 1, 11 and 19** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Jain et al* (US 6,225,999) in view of *Hamner et al* (US 5,960,439).

a. **Per claim 1**, *Jain et al* teach a method for reporting topology changes in a subnet of a switched fabric including at least a client, a subnet manager (SM) and switches interconnected via links, said method comprising:

- creating and reporting a list of topology changes that are interesting to the client for topology change notifications (col.2 line 42-col.3 line 14, col.5 line 45-col.6 line 23, col.6 lines 45-67, col.7 lines 8-18—provision for creating list for topology of specific devices of interest and reporting topology changes via immediate indicators);
- when a topology change occurs in the subnet, determining if the topology change is in the list of topology changes created by the interested client (col.2 line 54-col.3 line 2); and
- if the topology change is in the list of topology changes created by the interested client, reporting a topology change event to the interested client (col.2 line 54-col.3 line 2, col.7 line 35-col.8 line 16);
- wherein the list of topology changes includes but is not limited to creation of a new data path in the switch fabric and destruction of an existing data path in the switched fabric (col.7 line 46-col.8 line 16—provision for indicating and updating the topology changes).

Although *Jain et al* teach provision for indicating and updating the topology changes based on the status of the monitored devices, *Jain et al* fail to explicitly state that the topology changes include creation of a new data path in the switch fabric and destruction of an existing data path in the switched fabric. However, *Hamner et al* disclose topology changes associated with adding, modifying and removing devices when updating a user-defined listing of network devices (col.5 lines 19-30 and 44-48, col.5 line 61-col.6 line 58, col.7 line 55-col.8 line 9, col.8 lines 25-45, col.9 lines 17-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of *Jain et al* and *Hamner et al* for the purpose of allowing a user to define which devices of the network topology the user is interested in viewing—this allows for customizable, up-to-date topology views to be displayed to the user as opposed to the user having to sort through an extensive and complicated topology view for the entire network. The user would therefore be able to efficiently monitor and track changes for specific devices/paths of interest instead of having to view undesirable topology changes.

b. **Claims 11 and 19** contain limitations substantially equivalent to claim 1 and are therefore rejected under the same basis.

2. **Claims 2-8, 12-18, and 20-26** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Jain et al* (US 6,225,999) in view of *Hamner et al* (US 5,960,439) in further view of *Natarajan et al* (US 7,003,559).

c. **Per claim 2**, *Jain et al* and *Hamner et al* teach the method as claimed in claim 1, as applied above. *Hamner et al* teach filtering the network topology to display only the devices of interest to the user (col.9 lines 17-31), yet fail to explicitly teach wherein said list of topology changes is created by the client to serve as client-defined filters that specify the types of topology changes the client is interested in receiving notifications. However, *Natarajan et al* teach user inquiries for specific types of topology changes, such as for the shortest path—which is updated when a new shorted path is determined (col.6 lines 9-14 and 36-50, col.7 lines 54-67, col.9 lines 50-67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of *Jain et al* and *Hamner et al* with *Natarajan et al* for the purpose of permitting the generation of user-defined types of topologies, because this allows the

user to dictate the desired types of topological changes without having to be notified of changes that are of no interest to the user.

d. **Claims 12 and 20** are substantially equivalent to claim 2 and are therefore rejected under the same basis.

e. **Per claim 3**, *Jain et al* and *Hamner et al* with *Natarajan et al* teach the method as claimed in claim 2, *Hamner et al* further teach wherein said list of topology changes includes, but is not limited to, when a new data path is created between a pair of end nodes in the subnet, when an existing data path is destroyed between a pair of end nodes in the subnet, when a new device is inserted in the subnet, and when an existing device is removed from the subnet (col.5 lines 19-30 and 44-48, col.5 line 61-col.6 line 58, col.7 line 55-col.8 line 9, col.8 lines 25-45, col.9 lines 17-67; *Natarajan et al*: col.6 lines 36-50, col.7 lines 54-67, col.9 lines 50-67).

f. **Claims 13 and 21** are substantially equivalent to claim 3 and are therefore rejected under the same basis.

g. **Per claim 4**, *Jain et al* and *Hamner et al* teach the method as claimed in claim 1, *Hamner et al* further teach wherein said client corresponds to an end node of the subnet having at least one channel adapter (CA) installed to support one or more ports for data communication via said links of the subnet (col.3 lines 32-47, col.4 lines 47-63; *Natarajan et al*: col.4 lines 9-15, col.5 lines 21-26).

h. **Per claim 5**, *Jain et al* and *Hamner et al* with *Natarajan et al* teach the method as claimed in claim 2, *Hamner et al* further teach wherein said determining the topology change in the list of topology changes and said reporting the topology change events to the interested client

are executed by said subnet manager (col.5 lines 17-67 and col.6 lines 30-45; *Nataraian et al*: col.4 lines 14-26, col.5 line 13-col.6 line 8).

i. **Per claim 6**, *Jain et al* and *Hamner et al* with *Nataraian et al* teach the method as claimed in claim 5, *Hamner et al* further teach wherein said subnet manager (SM) is installed in another end node of the subnet, and is implemented either in hardware or software to provide management services for all switches and end nodes in the subnet (Figure 1, col.5 line 63-col.6 line 58; *Nataraian et al*: Figure 1, col.3 line 50-col.4 line 26, col.4 line 56-col.5 line 12).

j. **Claims 7, 14 and 15** are substantially equivalent to claim 6 and are therefore rejected under the same basis.

k. **Per claim 8**, *Jain et al* and *Hamner et al* with *Nataraian et al* teach the method as claimed in claim 5, *Nataraian et al* further teach wherein said subnet manager (SM) is installed in another end node of the subnet for discovering the subnet topology, assigning unique addresses to all ports that are connected to the subnet, and establishing possible data paths among all ports by programming switch forwarding tables for download to the switches in the subnet for routing data packets to destinations via possible data paths established between switch pairs (col.5 lines 4-50, col.6 lines 36-50; *Hamner et al*: col.5 line 50-col.6 line 58, col.7 line 6-col.8 line 45).

l. **Per claim 9**, *Jain et al* and *Hamner et al* teach the method as claimed in claim 1, *Nataraian et al* further teach wherein said client sends a VendorSet (SetNotificationFilter) message to the subnet manager (SM) after the list of topology changes is created to indicate the topology changes that require client notifications, and said subnet manager (SM) sends a VendorGetResp (SetNotificationFilter) message back to the interested client to confirm receipt

of the list of topology changes that the client is interested (col.8 line 7-col.9 line 10, col.10 line 1-col.11 line 18).

m. **Claim 16** is substantially equivalent to claim 8 and is therefore rejected under the same basis.

n. **Claims 17 and 22** are substantially similar to claim 9 and are therefore rejected under the same basis.

o. **Per claim 10**, *Jain et al* and *Hamner et al* teach the method as claimed in claim 1, *Natarajan et al* further teach wherein said subnet manager (SM) sends a VendorSend (TopologyChangeNotification) message to the interested client after the topology change is determined in the list of topology changes to notify the topology change that occurred, and said client sends a VendorSendResp (TopologyChangeNotification) message back to the subnet manager (SM) to acknowledge the topology change notification (col.5 lines 13-40, col.7 line 54-col.9 line 10, col.10 line 1-col.11 line 18; *Hamner et al*: col.8 lines 38-45, col.9 lines 17-31).

p. **Claims 18 and 23** are substantially equivalent to claim 10 and are therefore rejected under the same basis.

q. **Per claim 24**, *Jain et al* and *Hamner et al* with *Natarajan et al* teach the method as claimed in claim 1, *Natarajan et al* further teach wherein the creation of the new data path occurred by adding links and switches into a switched fabric and the destruction of the existing data path occurred by removing links and switches from the switched fabric (col.6 lines 36-50, col.7 lines 54-67, col.9 lines 50-67; *Hamner et al*: col.5 lines 19-30 and 44-48, col.5 line 61-col.6 line 58, col.7 line 55-col.8 line 9, col.8 lines 25-45, col.9 lines 17-67 ).



r. **Claims 25 and 26** are substantially equivalent to claim 24 and are therefore rejected under the same basis.

### **CONCLUSION**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Liang et al (5,732,086), Harada et al (6,687,832), Chaffee et al (2002/0186665), Callon (7,035,202), Mannepalli et al (6,842,425), Beaudoin et al (6,941,359), Singh et al (5,758,083), Kelly (6,393,425), Hemphill et al (6,490,617).


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kristie Shingles whose telephone number is 571-272-3888. The examiner can normally be reached on Monday-Friday 8:30-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached on 571-272-3880. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**Kristie Shingles**  
**Art Unit 2141**

kds

  
**RUPAL DHARIA**  
**SUPERVISORY PATENT EXAMINER**